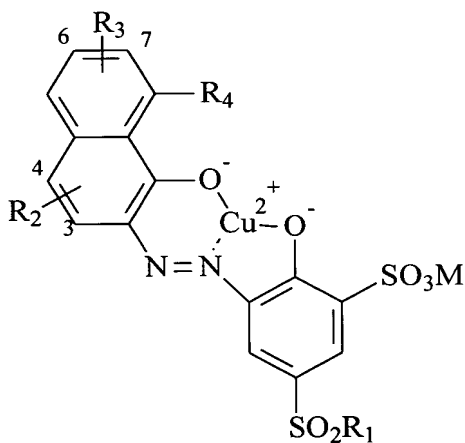


## Claims:

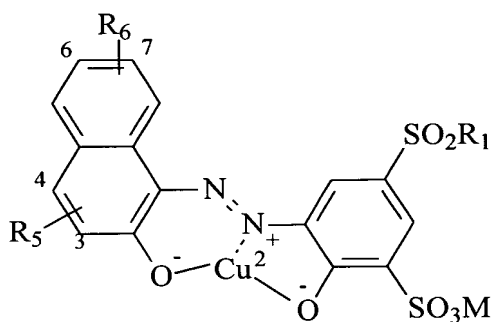
### 1. Copper complex monoazo dyes of general formulas (V)

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(V)

and (VI)



(VI)

wherein

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M represents hydrogen, a metal cation or an ammonium cation, which optionally may be substituted by one or more alkyl or substituted alkyl groups or alkyl ethers of diols each having from 1 to 18 C atoms;

R<sub>1</sub> represents alkyl having from 1 to 4 C atoms, substituted alkyl having from 2 to 4 C atoms, where the substituents are selected from the group consisting of hydroxy and sulfato; or alkenyl having from 2 to 4 C atoms;

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R<sub>2</sub> represents hydrogen or SO<sub>3</sub>M;

- 5            R<sub>3</sub>        represents hydrogen, SO<sub>3</sub>M, NH<sub>2</sub>, NHCOD<sub>1</sub>, where D<sub>1</sub> represents unsubstituted or substituted alkyl having from 1 to 6 C atoms, where the substituents are selected from the group consisting of carboxy, chloro or bromo; phenyl or substituted phenyl, where the substituents are selected from the group consisting of methyl, chloro, bromo, carboxy or sulfo; or NHSO<sub>2</sub>D<sub>2</sub>, where D<sub>2</sub> represents unsubstituted alkyl having from 1 to 6 C atoms, phenyl or substituted phenyl, where the substituents are selected from the group consisting of methyl, fluoro, chloro or bromo;
- 10           R<sub>4</sub>        represents hydrogen, SO<sub>3</sub>M, NH<sub>2</sub> or NHSO<sub>2</sub>D<sub>3</sub>, where D<sub>3</sub> represents alkyl having from 1 to 6 C atoms, phenyl or substituted phenyl where the substituents are selected from the group consisting of methyl, fluoro, chloro or bromo;
- 15           R<sub>5</sub>        represents hydrogen, SO<sub>3</sub>M, COOM or COND<sub>4</sub>D<sub>5</sub>, where D<sub>4</sub> and D<sub>5</sub> independently represent hydrogen, unsubstituted or substituted alkyl having from 1 to 6 C atoms, where the substituents are selected from the group consisting of methoxy, ethoxy, isopropoxy and hydroxy
- and
- 20           R<sub>6</sub>        represents hydrogen or SO<sub>3</sub>M.

2. Copper complex monoazo dyes according to Claim 1, wherein R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> are as defined in claim 1;
- 25           R<sub>1</sub>        represents alkyl having from 1 to 4 C atoms
- and
- M        represents hydrogen, a metal cation or an ammonium cation, which optionally may be substituted by one or more alkyl or substituted alkyl groups or alkyl ethers of diols each having from 1 to 12 C atoms.
- 30           3. Copper complex monoazo dyes according to Claim 1, wherein R<sub>2</sub>, R<sub>5</sub> and R<sub>6</sub> are as defined in claim 1;
- R<sub>1</sub>        represents alkyl having from 1 to 4 C atoms;
- M        represents hydrogen, a metal cation or an ammonium cation, which optionally may be substituted by one or more alkyl or substituted alkyl
- 35           groups or alkyl ethers of diols each having from 1 to 12 C atoms
- and
- R<sub>3</sub>, R<sub>4</sub> independently represent hydrogen or SO<sub>3</sub>M.

4. Copper complex monoazo dyes according to Claim 1, wherein

$R_2$  and  $R_6$  are as defined in claim 1;

$R_1$  represents alkyl having from 1 to 4 C atoms;

$R_3$ ,  $R_4$  independently represent hydrogen or  $\text{SO}_3\text{M}$ ;

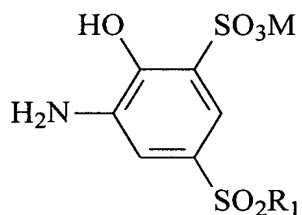
5  $\text{M}$  represents hydrogen, a metal cation or an ammonium cation, which optionally may be substituted by one or more alkyl or substituted alkyl groups or alkyl ethers of diols each having from 1 to 12 C atoms

and

$R_5$  represents hydrogen,  $\text{SO}_3\text{M}$  or  $\text{COOM}$ .

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5. Process for the preparation of copper complex monoazo dyes according to Claim 1, wherein n aromatic amine of general formula (VII),

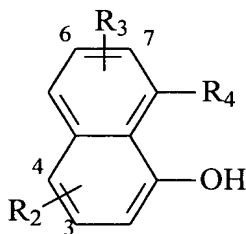


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(VII)

where  $R_1$  and  $\text{M}$  are as defined in claim 1, is diazotized and subsequently coupled with a compound of formula (VIII)

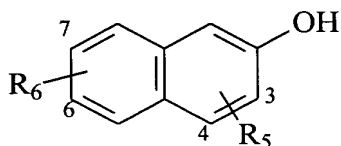
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(VIII)

25

or (IX)



(IX)

- 5        wherein R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are as defined in claim 1,  
to the intermediate metal free dye  
and  
the intermediate metal free dye obtained in this way is reacted with a  
coppering compound to form the copper complex dyes of general formulas  
10        (V) and (VI).
6.        Process for recording text and images on recording sheets and for dying and  
printing natural or synthetic fiber materials, nanoporous materials, leather  
and aluminium by applying thereto a copper complex monoazo dye  
15        according to Claim 1.
7.        Liquid dye preparations comprising at least one copper complex monoazo  
dye or a mixture of copper complex monoazo dyes according to Claim 1.
- 20        8.        Inks for ink jet printing, comprising at least one copper complex monoazo dye  
or a mixture of copper complex monoazo dyes according to Claim 1.
9.        Inks for ink jet printing, comprising in addition to at least one copper complex  
monoazo dye or a mixture of copper complex monoazo dyes according to  
25        Claim 1 one or more other dyes.